



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

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Sacramento, California 95825-1846

IN REPLY REFER TO:

1-1-03-F-0101

JUN 10 2003

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P.O. Box 281213  
Lakewood, CO 80228-8213

Subject: Formal Section 7 Consultation on the Proposed Path 15  
Transmission Line Project, Merced and Fresno Counties,  
California

This is in response to your February 7, 2003, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Path 15 Transmission Line Project (Path 15 Project) in Merced and Fresno Counties, California. Your request was received in our office on February 12, 2003. The Western Area Power Administration (WAPA) proposes to construct and operate the Path 15 Project. Components of the proposed project include:

- construction of an 84-mile 500-kilovolt (kV) transmission line from the Los Banos Substation in Merced County to the Gates Substation in Fresno County
- realignment of a small portion of the Los Banos-Midway No. 2 transmission line
- construction of a 2-acre permanent storage yard in the vicinity of the Los Banos Substation and a 1-acre expansion of the Los Banos Substation
- construction of 68.0 miles of new access roads
- improvements to 47.5 miles of existing access roads
- routine maintenance activities associated with operation of the new transmission line

In 1985, a group of California public and private utilities and WAPA constructed the California-Oregon Transmission Project (COTP). The Los Banos - Gates Transmission Project was proposed as part of the COTP, but was not built at that time for a variety of reasons. The Los Banos - Gates Transmission line (Path 15) is now proposed to alleviate a power transfer bottleneck and to meet the need for additional operational flexibility and capacity between Northern and Southern California. Pacific Gas & Electric (PG&E) filed an application with the California Public Utilities Commission (CPUC) to construct the Path 15 project (PG&E 2001a). WAPA, at the direction of the Secretary of Energy and pursuant to recommendations in the

National Energy Policy, initiated a separate parallel Federal process to construct the Path 15 project. Presently, the Path 15 project is a Federal project financed by private funding, with WAPA as the lead federal agency.

The transmission line crosses private, municipal (City of Coalinga), and Federally owned lands. The Federal lands are owned by the Department of Interior [Bureau of Land Management (BLM)] and administered by the California Department of Water Resources in the vicinity of Los Banos Creek and Reservoir. Additionally, a small corner of California Department of Fish and Game (CDFG) land (725 feet on the centerline) will be spanned by transmission line conductor, but not disturbed by construction activities. This area is a little over a mile south of Los Banos Substation and west of Jasper Sears Road. The WAPA is the lead agency in this formal consultation. The actions will occur primarily on non-Federal lands.

This document represents the Service's biological opinion on the effects of the action on the following federally listed animal species:

San Joaquin kit fox, *Vulpes macrotis mutica* (endangered)  
giant kangaroo rat, *Dipodomys ingens* (endangered)  
bald eagle, *Haliaeetus leucocephalus* (threatened)  
California condor, *Gymnogyps californianus* (endangered)  
blunt-nosed leopard lizard, *Gambelia sila* (endangered)

and the following federally-listed plant species:

Hoover's eriastrum, *Eriastrum hooveri* (threatened)  
San Joaquin woolly-threads, *Monolopia congdonii* (endangered)

in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

The Service has determined that this project is not likely to adversely affect giant garter snake (*Thamnophis gigas*), Fresno kangaroo rat (*Dipodomys nitratooides exilis*), Tipton kangaroo rat (*Dipodomys nitatooides nitratooides*), riparian (San Joaquin) woodrat (*Neotoma fuscipes riparia*), mountain plover (*Charadrius montanus*), California red-legged frog, *Rana aurora draytonii*, California tiger salamander, *Ambystoma californiense*, longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), delta smelt (*Hypomesus transpacificus*), Sacramento splittail (*Pogonichthys macrolepidotus*), California jewelflower (*Caulanthus californicus*), Kern mallow (*Eremalche kernensis*), palmate birds-beak (*Cordylanthus palmatus*), or San Benito evening primrose (*Camissonia benitensis*). Habitat within the project footprint does not support these species. If occupied habitat of any of these species is discovered during pre-activity surveys, WAPA must either avoid the habitat per their project description, or obtain incidental take authorization pursuant to reinitiation of this section 7 consultation. Unless new information indicates that the action will affect these species in a way not considered, no further consultation under the Act is necessary. If new information comes to light that indicates the action may affect them, please contact us immediately.

Critical habitat has been designated for the California condor. The project does not occur within California condor critical habitat.

This biological opinion is based on information provided in the following sources:

- Draft EIS/EIR for the California-Oregon Transmission Project and the Los Banos - Gates Transmission Project, November 1986 (WAPA, 1986);
- Final EIS/EIR for the California-Oregon Transmission Project and the Los Banos - Gates Transmission Project, January 1988 (WAPA, 1988);
- conditional application of PG&E for a Certificate of Public Convenience and Necessity Authorizing the Construction of the Los Banos - Gates 500kV Transmission Project (PG&E, 2001a);
- Supplement Analysis - Los Banos - Gates Transmission Project (Path 15), August 2001 (WAPA, 2001)
- Draft and Final Supplemental Environmental Impact Report for Los Banos - Gates 500kV Transmission Project (CPUC, 2002);
- Results of the Special-Status Plant and Wildlife Surveys Conducted along the Proposed Path 15 Transmission Line Project in Fresno and Merced Counties, September 2001 (PG&E, 2001b);
- letter dated October 23, 2001 from Jones & Stokes to PG&E regarding blunt-nosed leopard lizard survey results (Jones & Stokes, 2001);
- letter dated February 7, 2003 requesting formal consultation from the WAPA for the Path 15 project;
- Biological Assessment for Path 15 Transmission Line Project: Los Banos to Gates Substations, Fresno and Merced Counties, California, January 2003 (WAPA, 2003a);
- Mitigation Action Plan for the Los Banos - Gates (Path 15) Transmission Project, January 28, 2003 (WAPA, 2003b);
- May 29, 2003 computations of Path 15 Transmission Line Project Habitat Loss Compensation Credits made by WAPA (2003c);
- Results of the Spring 2003 Special-Status Surveys Conducted Along the Proposed Path 15 Transmission Line Project in Fresno and Merced Counties (WAPA, 2003d);
- letter report dated May 6, 2003 from Jones and Stokes to WAPA regarding blunt-nosed leopard leopard lizard habitat suitability surveys for the proposed Path 15 project (Jones & Stokes, 2003a);
- letter report dated May 6, 2003 from Jones and Stokes to WAPA regarding San Joaquin kit fox natal den survey results for the proposed Path 15 project (Jones & Stokes, 2003b);
- telephone conversations with Mark Wieringa and John Bridges of WAPA, and Steve Avery of Jones & Stokes;
- field investigations; and
- other sources of information.

A complete administrative record of this consultation is on file in this office.

## **Consultation History**

*March 15, 2001.* TOVA Applied Science and Technology met with the Service, BLM, and CDFG regarding the proposed project.

*March 16, 2001.* The Service provided to PG&E a list of special-status species with the potential to occur in the project area or be affected by the proposed project.

*June 26, 2001.* PG&E met with the Service regarding the proposed project.

*May 9, 2002.* The Service provided WAPA with a list of special-status species with the potential to occur in the project area or be affected by the proposed project.

*November 19, 2002.* The Service received from WAPA a draft Biological Assessment for the proposed project.

*February 12, 2003.* The Service received from WAPA the request, dated February 7, 2003, to initiate formal consultation, as well as a revised Biological Assessment and additional supporting materials.

*February 20-21, 2003.* The Service and WAPA personnel conducted a site visit and meeting to discuss special-status species issues.

*March 4, 2003.* The Service received draft habitat loss calculations from WAPA.

*March 12, 2003.* The Service sent a letter (1-1-03-I-1433) to WAPA requesting additional information necessary to complete formal consultation.

*March 12, 2003.* The Service received revised habitat loss calculations from WAPA.

*April 21-23, 2003.* Personnel from the Service, WAPA, and Jones and Stokes conducted a site visit to meet and discuss site specific special-status species issues and avoidance/minimization techniques.

*April 30, 2003.* The Service received revised habitat loss and compensation calculations from WAPA.

*May 8, 2003.* The Service received from Jones and Stokes the results of San Joaquin kit fox natal den surveys, blunt-nosed leopard lizard habitat suitability surveys, and special-status botanical surveys for Spring 2003, as well as maps for each of these surveys.

*May 29, 2003.* The Service received revised habitat loss and compensation calculations from WAPA.

## BIOLOGICAL OPINION

### Description of the Proposed Action

Descriptions of the project are found in the Biological Assessment. The components of the project that relate to potential impacts to biological resources are described below. The general locations of the project is shown on Figure 1. In general, construction practices would include surveying, clearing, determining access requirements, establishing construction facilities, building or improving access roads, foundation installation, structure assembly, conductor installation, and cleanup and removal of construction facilities. The currently proposed project is essentially identical to the preferred alternative for the Los Banos - Gates Transmission Project proposed in the mid-1980's as part of the California - Oregon Transmission Project. The project is divided here into three parts; (1) the transmission line, (2) the access roads, and (3) operational maintenance activities.

#### Transmission Line

The new single-circuit, overhead 500-kV transmission line from Los Banos Substation to Gates Substation would be located roughly 2,000 feet west of two existing PG&E 500-kV Pacific Intertie transmission lines for much of its 84-mile length. The project area also generally parallels Interstate 5, extending approximately three to seven miles west of Interstate 5. The line would be located within a 200-foot right-of-way. Approximately 345 transmission line structures, varying in height from approximately 100 to 160 feet would be installed. Most would be of lattice steel construction, but single-pole steel structures would be used in some areas.

Constructing this line would also require the realignment of the last few structures of an existing 500-kV transmission line, known as Los Banos - Midway No. 2, into Gates Substation. This realignment would occur on the last 1,000 to 2,500 feet of the line immediately adjacent to the substation. In addition, a 2-acre permanent storage yard will be constructed in the vicinity of the Los Banos Substation for the storage of pre-fabricated temporary emergency structures. The specific location of the storage area has not yet been determined, but it would be fenced and graveled. The Los Banos Substation will be expanded by approximately one acre on the east side to accommodate connection equipment. This would be an expansion of the fenced substation area, but is within the currently fenced parcel owned by PG&E.

Construction of the transmission line also involves establishing equipment staging areas and conductor pull sites. Conductor pull sites would be located within the 200-foot right-of-way, except for possibly a few locations at angle points; if needed, additional right-of-way will be purchased at these locations. It is anticipated that there will be eight temporary staging areas of approximately 20 acres each, four field office/parking areas of five acres each, and four equipment/material storage areas of five acres each. Since these sites, and the conductor pulling sites, are dependent on contractor negotiations with landowners, the length of conductor the contractor can procure, and other factors, the actual locations are yet to be determined.

Similarly, the contractor, at his/her discretion, may elect to construct part or all of the transmission line using helicopters. If so, the contractor will be responsible for negotiating structure assembly

sites at intervals along the project area. These locations of these sites also cannot be determined at this time, but will be located adjacent to existing roads.

The single-circuit 500-kV transmission line from the Los Banos Substation to the Gates Substation, to be constructed by WAPA, will be approximately 84 miles long, and require 345 structures. WAPA calculates that at the most 299.72 acres of habitat will be permanently disturbed; at the most 442.43 acres will be temporarily disturbed. This calculation includes permanent disturbance of habitat for structure foundations, 20-foot access roads, spur roads, and temporary disturbance for structure sites, wire pulling and splicing sites, and upgrading of existing roads.

### Access Roads

As part of the proposed project, access roads to support construction and maintenance of the transmission line would be established. Access would be a mix of existing roads, improved existing roads, new roads, and overland travel. As presently proposed, the project would utilize 74.6 miles of existing roads, 47.5 miles of existing roads that need some improvement, 68.0 miles of newly constructed roads, and 4.2 miles of overland travel routes, for a total of 194.3 miles of access roads. These totals do not include public roads, but include locations where access rights would have to be negotiated or purchased. Specific locations would be determined for overland access, and easements obtained for those locations only, in the same manner as for newly constructed access roads. Access road easements would be 30 feet wide, and the disturbed area within the easement would be approximately 20 feet wide. The majority of the access routes would be located on private property, and locked gates will be installed in every fence crossed to prevent increased or unauthorized access and attendant environmental effects.

Approximately 29 dry wash crossings would require some form of improvement where they would be crossed by permanent access roads. These improvements would mostly be the installation of properly sized corrugated metal culverts under local fill from road construction activities. These dry washes are narrow, deeply incised channels having no associated riparian vegetation, and are essentially wet season runoff channels (WAPA, 2003e). At one location (Salt Creek) where a wide, flat crossing is possible, a rock pad in the dry bed would be placed at grade across the intermittent stream. These locations, together with culvert diameter and length information, will be provided upon completion of construction.

### Operational Maintenance

Following project construction, routine maintenance activities would occur periodically. The line would be inspected annually by helicopter for damaged insulators, loose hardware, and other structural problems. Should the aerial survey detect a potential problem, a ground crew would visit the identified location to correct the defect. Ground access would normally be required once every five years for detailed structure and footing inspections, bolt inspection/tightening, and similar activities. Twenty percent of the structures would be inspected each year. As a result, some access routes would be driven as much as once per year, while some spur roads/overland routes may be accessed every five years. Anomalous events such as extreme weather or accidental damage would require unscheduled access.

### Operational Maintenance

Following project construction, routine maintenance activities would occur periodically. The line would be inspected annually by helicopter for damaged insulators, loose hardware, and other structural problems. Should the aerial survey detect a potential problem, a ground crew would visit the identified location to correct the defect. Ground access would normally be required once every five years for detailed structure and footing inspections, bolt inspection/tightening, and similar activities. Twenty percent of the structures would be inspected each year. As a result, some access routes would be driven as much as once per year, while some spur roads/overland routes may be accessed every five years. Anomalous events such as extreme weather or accidental damage would require unscheduled access.

### Biological Survey Methodology

Prior to the initiation of field surveys, a review of the CDFG California Natural Diversity Database (CDFG 2003a) was conducted to determine the special-status species occurring in the project vicinity. The NDDDB was reviewed for quadrangles containing and surrounding the proposed transmission line corridor (San Luis Dam, Los Banos Valley, Ortigalita Peak NW, Ortigalita Peak, Laguna Seca Ranch, Hammond's Ranch, Chounet Ranch, Tumey Hills, Monocline Ridge, Ciervo Mtn, Levis, Lillis Ranch, Joaquin Rocks, Domengine Ranch, Coalinga, Gujarral Hills, and Huron).

A pre-survey reconnaissance visit was conducted by project wildlife biologists and botanists on April 16, 2001. The visit was conducted by helicopter. The entire study area was flown over to identify the plant communities and habitats present and to develop survey strategies. At several known locations of special-status plant species, botanists examined populations on the ground to determine whether the plants were evident and identifiable.

Subsequent to the reconnaissance visit, project biologists conducted field surveys during the period April 20-27, 2001 (PG&E, 2001b). The survey was performed within a 1,000-foot corridor located along the proposed route of the transmission line. The boundaries of this corridor were located 500 feet on each side of the centerline. Biologists used global positioning system receivers (GPS) to determine the survey transect boundaries in the field. In those areas where the terrain was too steep to be accessed by foot, the biologists were transported by helicopter to proposed structure locations. At these locations, biologists surveyed an approximately 1,000-foot radius around the proposed structure sites.

To the extent possible, botanical surveys followed standard survey guidelines (Nelson 1985, CDFG 2000). Botanists traversed the entire study area by foot, identifying all plants encountered to the extent possible; at a minimum, every plant was identified to the extent necessary to determine whether it was a listed taxon. A single, running checklist was accumulated over the survey period. A standard California Native Species Field Survey Form was filled out for each special status plant occurrence.

In addition blunt-nosed leopard lizard surveys following Service survey protocols were conducted from June 18-29 and August 1-14, 2001 (Jones & Stokes, 2001) at proposed staging and lay-down sites. In addition, structure locations were assessed for general blunt-nosed leopard lizard habitat suitability.

Further biological studies were undertaken in 2002 along the entire proposed transmission line alignment. A 200-foot corridor was surveyed with the boundaries of this corridor, being 100 feet on either side of the centerline (the study area). GPS units were again utilized to locate proposed structure locations in the study area. Surveys were conducted on foot and with an all-terrain vehicle. The entire 84-mile corridor was surveyed for target wildlife species. These surveys were conducted during the periods May 6-8, May 30-31, June 26-28, July 16-18, and August 7-9, 2002 (WAPA, 2003a).

The botanical survey conducted in 2002 followed the same general procedures as in 2001, but the survey focused on a more restricted study area. Because of the extreme drought conditions in the survey area during the 2001-2002 rainy season, many plants (including common species) were neither evident nor identifiable. Therefore, botanical surveys were conducted between Little Panoche Creek and Cantua Creek, where most of the special-status plants were encountered during the 2001 survey. The study area was a 200-foot corridor with the mid-line centered on the proposed structure locations. GPS units were again used to located proposed structure sites. The survey was conducted May 6-8 and June 19-21, 2002 (WAPA, 2003a).

Additional wildlife surveys were completed in 2003. In spring 2003 wildlife biologists conducted blunt-nosed leopard lizard habitat suitability surveys along proposed access routes and structure locations (Jones & Stokes 2003a). San Joaquin kit fox den and natal den searches were conducted February to April, 2003, using a method slightly modified from one suggested by the California Energy Commission (CEC). Briefly, a 2000-foot corridor centered on the transmission line corridor or access route was surveyed by 6-7 biologists. The biologists walked linear transects, spaced 50-80 feet apart depending on vegetation. Biologists also walked a 1,000 foot radius around all structure sites. Land currently under cultivation was not surveyed. These surveys attempted to locate any potential San Joaquin kit fox dens that may be present in the proximity of the study area.

During the survey, all dens, burrows, and other evidence of special status species were noted and mapped. San Joaquin kit fox potential and known dens, giant kangaroo rat burrows, San Joaquin antelope squirrel burrows, burrowing owl burrows, and raptor and owl nests were mapped on site maps.

The San Joaquin kit fox dens were classified according to the Service kit fox den definitions (Service, 1999):

- Known Den: Any existing natural den or man-made structure for which conclusive evidence or strong circumstantial evidence can show that the den is used or has been used at any time in the past by San Joaquin kit fox.
- Potential Den: Any natural den or burrow within the range of the species that has entrances of appropriate dimensions (4 to 12 inches in diameter) to accommodate San Joaquin kit foxes for which, however, there is little to no evidence of kit fox use.



- Popping Den: Any known San Joaquin kit fox den (as defined) used by kit foxes to whelp and/or rear their pups.
- Atypical Den: Any known San Joaquin kit fox den that has been established in, or in association with, a man-made structure.

The botanical survey conducted in 2003 also followed the same general procedures as in 2001, but the survey focused on new access routes or existing roads proposed for improvement, as well as overland travel routes and structure locations (WAPA 2003*d*). In addition, all natural habitat along the alignment between Derrick Avenue and Los Gatos Creek, previously surveyed in 2001, was resurveyed for California jewelflower. The botanical survey was conducted March 25 to April 10, 2003. Precipitation conditions during the 2003 surveys were greatly improved over previously conducted surveys. While no listed plants were identified in 2003, other special status plants were observed in greater numbers and over larger areas than previously identified, and new areas were recorded.

### Survey Results

This section describes the existing conditions of listed biological resources in the Path 15 Project area. Data for this analysis was collected in 2001, 2002 and 2003 during biological field surveys for sensitive wildlife and plants. The methodologies and results of these surveys are summarized below. The Biological Assessment (Section 2.4) describes habitat types in the area of the Path 15 Project following Holland (1986) and Sawyer and Keeler-Wolf (1995).

*Sensitive Plants and Animals.* The following sensitive plants and animals were found at or near the Path 15 Project area:

- |                                  |                               |                        |
|----------------------------------|-------------------------------|------------------------|
| • Loggerhead shrikes             | • Northern harriers           | • Protruding buckwheat |
| • San Joaquin antelope squirrels | • Blunt-nosed leopard lizards | • Cottony buckwheat    |
| • California horned larks        | • Crownscale                  | • Idria buckwheat      |
| • Tri-colored blackbirds         | • Lost Hills crownscale       | • San Benito poppy     |
| • Western burrowing owls         | • Recurved larkspur           | • Forked fiddleneck    |
| • Golden eagles                  | • California androsace        | • Rayless ragwort      |
| • Prairie falcons                | • Gypsum-loving larkspur      | • Round-leaved filaree |

Appendix B to the Biological Assessment (WAPA 2003*a*) contains maps with locations of sensitive biological resources. Maps provided with survey results from Spring 2003 also contain locations of sensitive biological resources (Jones & Stokes, 2003*a,b* and WAPA, 2003*d*).

### Proposed Conservation Measures

The biological assessment for the proposed Path 15 project (WAPA, 2003*a*) contains specific measures designed to minimize or avoid impacts to listed species. These measures are identified below.

*San Joaquin kit fox*

Intensive surveys have been conducted to identify San Joaquin kit fox natal or pupping dens, in accordance with Service guidelines (Service, 1999), and include the transmission line right-of-way and all access road easements, including a 1000 foot buffer area.

All structure locations, new roads, and construction of conductor splicing/tensioning sites, construction yards and work camps would be located to avoid suspected kit fox dens. Pre-construction surveys would also be implemented to further minimize effects. Within 30 days of the commencement of construction activities, a qualified biologist would re-survey the areas that would be disturbed. Any den (i.e., burrow with an entrance greater than 4 inches in diameter) would be monitored for evidence of kit fox use by placing either a tracking medium or wildlife monitoring cameras at the entrance for at least three consecutive nights. An alternative procedure could be the use of the video endoscope (fiber-optic scope) to survey suspected dens or kit fox burrow systems.

Disturbance and destruction of dens that could be occupied would be avoided where possible. However, if occupied dens are located within the proposed work area and cannot be avoided during construction, qualified biologists would remove these dens by carefully hand excavating them following the procedures described by the Service (1999).

WAPA would notify the Service within one business day if a natal or pupping den is found in the survey area. WAPA would provide the Service with verbal notification of the results of pre-construction den searches and den excavations within five days of their completion and before the start of construction in the area. WAPA would provide the Service with written notification of the results within 30 days of their completion.

Following pre-construction den searches and den excavations, and before construction, biologists would establish exclusion zones around the remaining dens following procedures described by the Service (1999). Exclusion zones would be marked in the field with stakes and flagging.

The radius of these zones would be:

- Active Den = 100 feet.
- Natal or Pupping Den = 1000 feet, December 1 to May 31.

Construction-related activities in these zones would be restricted to essential vehicle operation on existing roads and foot travel. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities would be prohibited within the exclusion zones. In the event that construction is necessary near an active den, WAPA would consult with the Service to determine the appropriate measures to minimize the disturbance to dens.

WAPA would ensure the removal of all stakes and flagging marking exclusion zones within 30 days after construction and site restoration have been completed in the area.

*Giant kangaroo rat*

Pre-construction surveys would be conducted, as described in the blunt-nosed leopard lizard section (below). Any active burrows/precincts found would be assigned a number and mapped. Active burrows or precincts found would be flagged in the field with pin flags marked with the burrow or precinct number.

WAPA would provide the Service with verbal notification of the results of pre-construction burrow searches within five days of the completion and before the start of construction in the area. Western would provide the Service with written notification of the results within 30 days after their completion. Following pre-construction searches for active giant kangaroo rat burrows or precincts and before construction, biologists would establish exclusion zones around any active giant kangaroo rat burrow or precincts. Exclusion zones would have a 30-foot (9.1 m) radius and would be marked in the field with stakes and flagging.

Construction-related activities in these zones would be restricted to essential vehicle operation on existing roads and foot travel. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities would be prohibited within the exclusion zones. In the event that construction is necessary near an active burrow, WAPA would consult with the Service to determine the appropriate measures to minimize the disturbance to burrows or precincts.

WAPA would ensure the removal of all stakes and flagging marking exclusion zones within 30 days after construction and site restoration have been completed in the area.

*California condor*

WAPA will install line marking devices on the ground wires in consultation with the Service. The line marking devices will make the ground wires more visible to California condors, and should greatly reduce the possibility of condors flying into the ground wires. They will be installed 50-feet apart on each ground wire, staggered so that they will appear to be 25-feet apart when viewed from the side. Additionally, dulled non-specular conductor will not be used, thus increasing the visibility of the lines.

*Mountain plover*

Static line marking measures proposed for California condors will also minimize collision risk for mountain plovers. Additionally, dulled non-specular conductor will not be used, thus increasing the visibility of the lines.

*Blunt-nosed leopard lizard*

Within 30 days of the beginning of construction activities, wildlife biologists would conduct Service protocol surveys for blunt-nosed leopard lizards, and systematic searches for active blunt-nosed leopard lizard burrows in the project area, to include a 30-foot wide buffer. Biologists would conduct burrow searches by systematically walking transects where ground-disturbing activities

would occur. Transect widths would be 30 to 100 feet wide depending on vegetation height and topography (CDFG, 1990). Biologists would conduct blunt-nosed leopard lizard burrow searches in conjunction with pre-construction San Joaquin kit fox and giant kangaroo rat burrow searches.

Active burrows would be flagged in the field with pin flags marked with the burrow number. Information on the size of the burrow, signs of activity, surrounding terrain and habitat type, presence of special habitat features, and distance to other burrows would be recorded.

WAPA would provide the Service with verbal notification of the results of pre-construction burrow searches within 5 days of completion and before the start of construction in the area. WAPA would provide the Service with written notification of the results within 30 days after these activities are completed.

Following pre-construction searches for blunt-nosed leopard lizard burrows and before construction, biologists would establish exclusion zones around active leopard lizard burrows. Exclusion zones would have a 30-foot radius and would be marked in the field with stakes and flagging.

Construction-related activities would be restricted to essential vehicle operation on existing roads and foot travel. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities would be prohibited within the exclusion zones. In the unlikely event that construction is necessary near an active burrow, WAPA would consult with the Service to determine the appropriate measures to minimize the disturbance to burrows or precincts.

If no individuals blunt-nosed leopard lizards or active burrows are found, construction would proceed in unoccupied habitat. Biological monitors would be on site during all construction activities in suitable habitat. Individual lizards found within the construction area would be relocated to similar, adjacent habitats at least 50 yards outside of the construction corridor. Such capture, protection, and removal of individual lizards would be coordinated with the Service.

The construction area shall be continuously monitored by biologists during construction and appropriate measures taken to ensure that individuals of relocated species do not move into the construction corridor. If blunt-nosed leopard lizards repeatedly enter the cleared right-of-way (ROW), then barriers such as protective fencing or drift fences suggested by Germano, et al. (1993) would be erected for the duration of construction in these areas.

All areas of native San Joaquin Valley habitats disturbed during construction would be recontoured and revegetated in accordance with landowner or land manager requirements. All disturbed areas would be regularly monitored and reseeded as necessary to ensure that they are returned to pre-project conditions.

Right-of-way access roads would be gated and locked to minimize unnecessary access to the project area.

*California red-legged frog*

In order to protect California red-legged frog individuals, as well as their habitat, WAPA would implement the following avoidance and minimization measures:

- Erosion control measures would be implemented to minimize indirect effects of erosion and sedimentation on California red-legged frog riparian habitat. Because of their sensitivity to impacts, ecological value, and protection under environmental law and regulations, WAPA's policy is to avoid construction in riparian areas if at all possible.
- Structure locations, which are typically on high ground for conductor clearance purposes, would avoid wetland habitat (drainages, riparian, ponds, stock ponds, etc.) of the California red-legged frog. The transmission line itself would span any California red-legged frog stock pond and drainage habitat found in the right-of-way.
- Long-term loss of upland foraging habitat for California red-legged frog would be minimized by maximizing the use of overland travel to access structure locations, and re-contouring and re-seeding disturbed areas.

*California tiger salamander*

In order to protect California tiger salamanders individuals, as well as their habitat, WAPA would implement the following avoidance and minimization measures:

- Erosion control measures would be implemented to minimize indirect effects of erosion and sedimentation on California tiger salamander habitat. Because of their sensitivity to impacts, ecological value, and protection under environmental law and regulations, WAPA's policy is to avoid construction in riparian areas if at all possible.
- Structure locations, which are typically on high ground for conductor clearance purposes, would avoid habitat (drainages, riparian, ponds, stock ponds, etc.) of the California tiger salamander. The transmission line itself would span any California tiger salamander habitat found in the right-of-way.
- Long-term loss of upland foraging and dispersal habitat for California tiger salamander would be minimized by maximizing the use of overland travel to access structure locations, and re-contouring and re-seeding disturbed areas.

*California jewelflower*

Pre-construction surveys would occur within 30 days of the start of construction, and all construction activities would be monitored by qualified biologists for the duration of the project. These surveys would ensure, to the extent possible, that the species is identified if it is indeed present.

If California jewelflower is discovered during one of the surveys, the following avoidance and minimization measures would be implemented to protect the species and its habitat:

- Erosion control measures would be implemented to minimize effects of erosion and sedimentation on California jewelflower habitat.
- Pre-construction surveys would be conducted at structure locations, new roads, conductor tensioning sites, conductor splicing/tensioning sites, work camps, or any other areas that would be disturbed by construction activities.
- Following pre-construction surveys, if California jewelflower individuals or populations are found within construction zones, biologists would establish exclusion zones around the plants using temporary fencing, or stakes and flagging. On-site monitoring during construction would be implemented to ensure no harm would occur to individuals in these locations.
- Structure locations, access roads, and other construction sites would be located to avoid known locations of California jewelflower.
- Right-of-way access roads would be gated and locked to minimize unnecessary access to the project area.

#### *Hoover's eriastrum*

In order to protect Hoover's eriastrum habitat, WAPA would implement the following avoidance and minimization measures:

- Any areas identified as supporting Hoover's eriastrum would be flagged or fenced, and avoided by construction activities. Access roads would be routed to avoid habitat. On-site monitoring during construction would be implemented to ensure no harm would occur to populations of Hoover's eriastrum.
- Erosion control measures would be implemented to minimize indirect effects of erosion and sedimentation on Hoover's eriastrum habitat. Because of their sensitivity to impacts, ecological value, and protection under environmental law and regulations, WAPA's policy is to avoid construction in riparian areas if at all possible.
- Structure locations, which are typically on high ground for conductor clearance purposes, would avoid habitat (drainages, riparian, etc.) of Hoover's eriastrum. The transmission line itself would span any Hoover's eriastrum habitat found in the right-of-way.
- Right-of-way access roads would be gated and locked to minimize unnecessary access to the project area.

*San Joaquin woolly-threads*

In order to protect San Joaquin woolly-threads habitat, WAPA would implement the following avoidance and minimization measures:

- Erosion control measures would be implemented to minimize effects of erosion and sedimentation on San Joaquin woolly-threads habitat.
- Pre-construction surveys would be conducted at structure locations, new roads, conductor tensioning sites, conductor splicing/tensioning sites, work camps, or any other areas that would be disturbed by construction activities.
- Following pre-construction surveys, if San Joaquin woolly-threads populations are found within the construction zones, biologists would establish exclusion zones around the populations using temporary fencing, or stakes and flagging. On-site monitoring during construction would be implemented to ensure no harm would occur to populations of San Joaquin woolly-threads.
- Structure locations, access roads, and other construction sites would be located to avoid San Joaquin woolly-threads habitat.
- Right-of-way access roads would be gated and locked to minimize unnecessary access to the project area.

*General Minimization/Avoidance Measures*

In addition to the species specific measures identified above, the biological assessment includes additional measures to be implemented by WAPA that are designed to minimize the impact of project-related effects on biological resources. These additional measures are identified below.

- Human intrusion and mechanical disturbance will be avoided in sensitive resource areas including creeks and riparian habitat, and identified dens/burrows of kit fox, giant kangaroo rat, and blunt-nosed leopard lizard. Service approved biologists or biological monitors will stake and flag exclusion zones around locations of active dens or burrows in or near construction areas. These minimization measures will follow specific Service protocol for the listed species that may occur in the project area.
- A construction vehicle speed limit of 15 mph will be posted and enforced during construction on all nonpublic project access roads. All access in the project area, including public access, will be restricted to those preplanned routes that have been identified to minimize impacts to Federally listed species. Access will be clearly marked in the field with appropriate flagging and signs. Gates will be installed in all fences, and will be kept closed and locked to prevent unauthorized access. All access and construction vehicle parking will be restricted to previously determined areas or existing roads.

- Erosion control measures will be installed prior to and during construction activities, and would direct runoff away from sensitive habitats (i.e. creeks, rivers, reservoirs, drainage swales, stock ponds, etc.).
- Revegetation of disturbed areas will be implemented as soon as possible to control erosion. The revegetated areas will be monitored and, as required, additional erosion control measures, including remedial seeding and/or planting, will be implemented until vegetation is established. Seed mix will be comprised of native species and approved by land owner and land management agencies in the project area.
- A qualified biological monitor will train all personnel entering the construction area prior to the start of construction. The training will include habitat sensitivity, identification of special-status species, and required practices within the project area. A fact sheet or other supporting materials containing this information will be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand the conservation and protection measures addressed. All persons entering the work areas will be required to show evidence of recent training regarding mandatory practices.
- Qualified biologists will continuously monitor all construction activity on site. The biological monitor will have the authority to stop and/or redirect project activities in coordination with the project manager to ensure the protection of resources and compliance with all environmental permits and project conditions. The biologists will complete daily reports/logs summarizing activities and environmental compliance. The number of biological monitors will vary, but will be sufficient to monitor every ongoing work activity. Work activities too widely separated to be adequately monitored by a single biologist will require an additional biological monitor on site.
- WAPA will consult with the Service concerning the acreages of lands affected by the proposed project and purchase appropriate amounts of compensation lands or credits. WAPA will work closely with the Service to establish a reasonable level of compensation lands or credit purchases in the areas identified by them.

WAPA has also committed to additional mitigation measures identified in the mitigation action plan (WAPA 2003b) and in the construction specifications for the proposed project, particularly Divisions 2A and 13 (WAPA 2003f). The measures listed below have been extracted from these documents and have the potential to minimize project-related impacts to biological resources.

- Structure placement should avoid areas where riparian vegetation or other vegetation communities of value occur.
- Temporary facilities, such as construction yards, and conductor tensioning and splicing sites should be sited to minimize disruption of the landscape by landform alteration and vegetation removal.



- Actions such as watering shall be taken to minimize fugitive dust emissions in any construction areas having the potential to generate dust.
- When possible construction activities should be scheduled during periods of low wind to reduce fugitive dust emissions.
- Existing roads will be used for access wherever possible. The number and length of newly constructed access roads will be minimized. Temporary spur roads to towers will be used and will be removed if they are not required for maintenance. Access roads should be designed to the minimum standard necessary for construction and maintenance vehicle use.
- Minimize vegetation stripping along the alignment.
- Replant temporarily disturbed areas with a mixture of perennial grasses, forbs, brush, shrubs, and tree species that will provide effective erosion control. Reseeding mixtures shall be landowner/manager approved. No non-native plant/grass seed will be added, only certified weed free hay will be used during mulching activities.
- Re-contour, prepare the surface, and seed all roads, construction sites, and other disturbed areas not required for project operation and maintenance.
- As much as possible, avoid construction activities and land surface disturbance in the immediate vicinity of unique plant communities and habitat features, such as remnant sand dunes, rock outcrops, riparian zones, alkali features, other wetlands, kit fox natal dens, and raptor nesting cliffs.
- Avoid construction activities in watercourses and wetlands.
- Minimize surface disturbing activities such as grubbing, grading, ditching and filling to the extent possible.
- Provide fire protection measures and avoid releases of fuels, oils, and other hazardous substances to the ground and water. No smoking will be allowed at any time, anywhere on the project, with the exception of inside closed vehicles.
- Schedule activities to minimize construction in the specific vicinity of golden eagle nests or kit fox natal dens during the periods of greatest sensitivity, i.e. February through the end of the nesting period.
- To minimize impact on kit foxes and other listed species, raptor nesting platforms will not be installed in certain areas along the line. Single pole, steel structures with anti-perching devices will be used in some areas to minimize raptor advantages.
- Construction of staging areas and pulling sites should be located adjacent to roads where practical.
- Where blasting is required for access roads or structure footings, debris should be recovered and removed where practical.

- Excavated material or other construction materials should be removed following construction.
- In construction areas where excavation is not required, vegetation should be left in place wherever possible and the original contours should be maintained in an undisturbed condition.
- Avoid permanent access road clearing to the extent possible, allowing the short annual grasses to cover the ground surface.
- All access roads not required for maintenance should be either permanently closed using the most effective and least environmentally damaging methods appropriate to the landowners, or be re-graded, and revegetated (with landowner concurrence).
- Domestic animals (pets) would not be allowed in the project area.

The measures discussed in these documents will minimize the chance of take of individuals and reduce impacts due to habitat loss. The mitigation action plan (WAPA 2003b) is a developing plan, which will be finalized, with input from the Service, before any project-related habitat disturbance occurs.

Through the section 7 process the Service and WAPA have reached agreement concerning compensation for the loss of habitat for sensitive species. WAPA has agreed to provide compensation funds to Wildlands, Inc. so that they can acquire and manage in perpetuity the compensation acres for this project. The following ratios of habitat to be acquired versus habitat being lost were provided by the Service, and used by the WAPA:

*Upland Scrub and Alkali Sink Habitats*

Permanent impacts to conserved land	4.0:1
Permanent impacts to other land	3.0:1
Temporary impacts to conserved land	2.1:1
Temporary impacts to other private land	1.1:1

*Upland Grassland Habitats*

Permanent impacts to conserved land	2.1:1
Permanent impacts to other land	1.1:1
Temporary impacts to conserved land	1.5:1
Temporary impacts to other land	0.5:1

*Active Agricultural Lands*

Permanent impacts	1.1:1
Temporary impacts	0.5:1